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Schedule—Testing.

REGULATION I OF 1923.

RECEIVED THE ASSENT OF HIS HIGHNESS THE MAHARAJA ON THE EIGHTH DAY OF JANUARY 1923.

A Regulation to control and regulate the importation, possession and transport of petroleum and other substances.

WHEREAS it is expedient to provide for the control and regulation of the importation, possession and transport of petroleum and other substances; His Highness the Maharaja is pleased to enact as follows:—

Preliminary.

Short title, commencement and extent.

1. (*1*) This Regulation may be called the Mysore Petroleum Regulation, 1923, and

(*2*) It shall come into force at once.

(*3*) Sections 1 to 3, and all the provisions of this Regulation in so far as they relate to dangerous petroleum and the importation of petroleum, extend to the whole of Mysore. The rest of this Regulation extends only to such areas as the Government may, by notification in the official Gazette, direct.

Definitions.

2. In this Regulation unless there is anything repugnant in the subject or context,—

(*a*) "petroleum" includes also—

(*i*) the liquids commonly known by the names of rock oil, Rangoon oil, Burma oil, paraffin oil, mineral oil, kerosene, petroline, gasoline, benzoline, ligroin, petroleum ether, benzine and benzol;

(*ii*) any inflammable liquid which is made from petroleum, coal, schist, shale, peat or any other bituminous substance, or from any product of petroleum;

(*iii*) carbon disulphide, ether and any inflammable hydro-carbon or derivative thereof and;

(*iv*) any liquid or viscous mixture, having in its composition any of the liquids aforesaid;

but it does not include any oil ordinarily used for lubricating purposes and having its flashing point at or above two hundred degrees of Fahrenheit's thermometer;

(b) "dangerous petroleum" means petroleum having its flashing point below seventy-six degrees of Fahrenheit's thermometer:

Provided that, when all or any of the petroleum in the possession of a dealer, is declared by the dealer, to be of one uniform quality, the petroleum shall not be deemed to be dangerous, if the samples selected from the petroleum have their flashing points, on an average, at or above seventy-three degrees of Fahrenheit's thermometer, and if no one of these samples has its flashing point below seventy degrees of that thermometer:

(c) to "import" means to bring into Mysore from outside the State.

(d) to "transport" means to remove within Mysore from one place to another.

(e) "prescribed" means prescribed by rules made under this Regulation.

Matters supplemental to definitions.

3. The "flashing point" of petroleum means the lowest temperature at which the petroleum yields a vapour which will furnish a momentary flash or flame when tested in accordance with the directions in the schedule with an apparatus which has been stamped and certified as provided by this Regulation, within a period of five years immediately preceding the date on which the apparatus is used for the testing, and after the corrections (if any) which the certificate declares are to be applied to the results of the testing, have been made.

Power to vary tests and prescribe new tests.

4. (1) The Government may, by notification in the official Gazette, alter or add to the schedule by laying down new or varied tests and directions for preparing and using them; and after the issue of any such notification as aforesaid, the reference in section 3, to the schedule shall be construed as referring to the said schedule as so altered or added to for the time being.

(2) The Government may, in like manner, lay down special tests and issue special instructions in respect of the testing of any substance other than petroleum to which the whole or any portion of this Regulation may be applied in exercise of the power conferred by section 21, and for which the tests in the first schedule are unsuitable.

Dangerous Petroleum.

Dangerous petroleum in quantities exceeding forty gallons.

5. (1) No quantity of dangerous petroleum exceeding forty gallons shall be imported or transported or kept by any one person or on the same premises, except under, and in accordance with the conditions (if any) of, a license from the Government.

(2) Every application for such a license shall be in writing in the prescribed form, and shall contain the prescribed particulars.

Dangerous petroleum in quantities not exceeding forty gallons.

6. No quantity of dangerous petroleum equal to, or less than, forty gallons shall be kept or transported without a license.

Provided that nothing in this section shall apply in any case where the quantity of the petroleum kept by any one person or on the same premises, or transported, does not exceed three gallons, and the petroleum is placed in separate glass, stoneware or metal vessels, each of which contains not more than a pint and is securely stopped.

Vessels containing dangerous petroleum to be labelled.

7. Dangerous petroleum—

(a) which is imported and is kept at any place after seven days from the date of its importation, or

(b) which is transported, or

(c) which is sold or exposed for sale,

shall be contained in vessels having attached thereto labels in conspicuous characters stating the description of the petroleum,

with the addition of the words "highly inflammable" and with the addition :—

(d) in the case of a vessels kept, of the name and address of the consignee or owner;

(e) in the case of a vessel transported, of the name and address of the sender; and,

(f) in the case of a vessel sold or exposed for sale, of the name and address of the vendor.

Petroleum Generally.

Power for Government to make rules.

8. (1) The Government may make rules to carry out the purposes and objects of this Regulation.

(2) In particular and without prejudice to the generality of the foregoing power, such rules may :—

(a) provide for the granting of licenses to import, possess or transport petroleum within Mysore in cases in which such licenses are by law required ;

(b) determine the places at which, and the conditions on and subject to which petroleum may be stored ;

(c) provide for the selection by an officer appointed by the Government in this behalf, and for the delivery to him, after petroleum has been imported, of samples of all petroleum imported ;

(d) provide, in the case of each consignment which is stated to be of one uniform quality, for the number of samples to be selected, and for the averaging of the results of the testing of those samples ;

(e) provide, where the results of the testing of the samples raise a doubt as to the uniformity of the quality of the petroleum in any such consignment, for the division of the consignment into lots, and for the selection and testing of samples of each lot, and for the treatment of the lot in accordance with the results of the testing of those samples ;

(f) fix fees for the sampling and testing of petroleum ;

(g) fix fees for the storage of petroleum unless any local authority is empowered in that behalf ;

(h) define, with respect to any petroleum produced within the State, the limits of the places in which such petroleum is to be refined ;

(i) provide for the testing at or near those places of petroleum so produced ;

(j) prevent the removal from those limits otherwise than under the provisions of this Regulation applicable to dangerous petroleum, of petroleum so produced which has not satisfied the prescribed test ;

(k) prescribe the authority by which licenses to possess or to transport petroleum may be granted ;

(l) fix the fee to be charged for any such license ;

(m) limit the quantity of petroleum to be covered by any such license ;

(n) prescribe the conditions which may be inserted in any such license ;

(o) limit the time during which any such license is to continue in force ;

(p) provide for the renewal of any such license ;

(q) provide for the nature and situation of the premises in respect of which licenses to possess petroleum may be granted, the inspection of premises so licensed and the testing of petroleum found thereon ;

(r) prescribe the manner in which the petroleum covered by a license to transport is to be packed, the mode and time of its transit, the route by which it is to be taken and its stoppage and inspection during transit ; and

(s) provide for prosecutions for any act done in violation of the provisions of this Regulation or of any rule made thereunder.

Procedure after petroleum has been stored.

9. (1) Petroleum imported in accordance with rules made under section 8, sub-section (2), shall not be removed from the places at which it is stored until the samples selected therefrom in accordance with those rules have been tested by an officer appointed by the Government in this behalf and the officer has given a certificate that the petroleum is not dangerous petroleum, or unless such a certificate given by a proper authority at the port of landing is produced in respect of the petroleum.

(2) If the officer, after testing the samples, refuses to give the certificate in respect of any petroleum, the Government may permit the consignee, within a time to be fixed by the Government in this behalf,—

(a) to rectify the petroleum,

(b) to apply for a license to import the petroleum as dangerous petroleum, or

(c) to re-export the petroleum.

(3) If the consignee does not, within the time fixed under sub-section (2), avail himself of the permission granted under that sub-section, the petroleum may be disposed of as the Government may direct.

(4) Notwithstanding anything in the foregoing provisions of this section, the Government, in its discretion, may, where the officer has refused the certificate, direct that the petroleum be re-tested by another officer appointed by it in this behalf, and may, if that officer advises that the petroleum is not dangerous petroleum, authorise its removal from the places at which it is stored.

Possession and transport of petroleum.

10. No quantity of petroleum exceeding five hundred gallons shall be kept by any one person or on the same premises, or shall be transported, except under, and in accordance with the conditions of, a license granted under this Regulation:

Provided that the Government may, by notification in the official Gazette, exempt from the operation of this section petroleum when transported in such particular manner and under such particular conditions as may be set forth in the notification.

Power to inspect and require dealer to sell samples.

11. Any officer specially authorised in this behalf by the Government may require any dealer in petroleum to show him any place and any of the vessels in which any petroleum in his possession is stored or contained, to give him such assistance as he may require for examining the same and to deliver to him samples of the petroleum on payment of the value of the samples.

Notice to be given when officer proposes to test samples.

12. When any such officer has, in exercise of the powers conferred by section 11, or by purchase, obtained a sample of petroleum in the possession of a dealer, he may give notice in writing to the dealer informing him that he is about to test the sample, or cause it to be tested, at a time and place to be fixed in the notice, and that the dealer or his agent may be present at the testing.

Certificate as to result of testing.

13. On any such testing, if it appears to the officer or other person so testing that the petroleum from which the sample has been taken, is or is not dangerous petroleum, the officer or other person may certify the fact; and the certificate so given shall be receivable as evidence in any proceedings which may be taken under this Regulation against the dealer in whose possession the petroleum was found, and shall, until the contrary is proved, be the proof of the fact stated therein, and a certified copy of the certificate shall be given, free of charge to the dealer at his request.

Penalties.

Penalty for illegal importation, possession or transport of petroleum, or for refusal to comply with section 11 or 12.

14. Whoever,—

(a) in contravention of this Regulation or of any of the rules thereunder, imports, possesses or transports any petroleum; or

(b) otherwise contravenes any such rules as aforesaid;

(c) breaks any condition contained in a license granted under this Regulation; or,

(d) being a dealer in petroleum, refuses or neglects to show to any officer authorized under section 11 any place or any of the vessels in which petroleum in his possession is stored or contained; or to give him such assistance as he may require for examining the same, or to give him samples of the petroleum on payment of the value of the samples;

shall be punishable with imprisonment for a term which may extend to one month, or with fine which may extend to five hundred rupees, or with both.

Penalty for contravention of section 7.

15. Whoever keeps, sells or exposes for sale dangerous petroleum in vessels not labelled as prescribed by section 7 shall be punishable with fine which may extend to five hundred rupees.

Confiscation of petroleum.

16. In any case in which an offence under section 14, clause (*a*), clause (*b*), or clause (*c*), or section 15 has been committed, the convicting Magistrate may direct that—

(*a*) the petroleum in respect of which the offence has been committed or

(*b*) where the offender is importing or transporting, or is in possession of, any petroleum exceeding the quantity (if any) which he is permitted to import, transport or possess, as the case may be, the whole or any part of the petroleum which he is importing or transporting or is in possession of,

shall, together with the tins or other vessels in which it is contained, be confiscated.

Jurisdiction.

17. The criminal jurisdiction under this Regulation shall be exercised by a Magistrate of the first class or where specially empowered by the Government to try cases under this Regulation, a Magistrate of the second class.

Test-apparatus.

Model test-apparatus.

18. A model of the apparatus for testing petroleum under this Regulation shall be deposited in the office of the Chemical Examiner to Government, Bangalore, and be marked with the words "Model test-apparatus."

Verification of test-apparatus

19. (1) The Chemical Examiner shall, on payment of the prescribed fee (if any), compare with the said model test-apparatus and verify every apparatus for testing petroleum which is submitted to him for the purpose.

(2) If any apparatus for testing petoleum, when compared and verified as provided by sub-section (1) is found correct or correct subject to certain corrections to be applied to the results of the tests, the Chemical Examiner shall stamp the same with a special number and with the date of the verification, and shall further give a certificate in writting under his hand, in the prescribed form, to the effect that on the date aforesaid the apparatus was compared and verified by him and found to be correct, or correct subject to certain specified corrections to be applied to the results of the tests.

(3) A certificate granted under this section shall, until the contrary is proved, be proof of the matters stated therein.

(4) The Chemical Examiner shall keep a register, in the prescribed form, of all certificates granted under this section.

(5) Subject to the payment of the prescribed fees (if any), the said model test-apparatus shall be at all reasonable times open to inspection by any person desiring to inspect it.

Miscellaneous.

Power to exempt petroleum from operation of Regulation.

20. The Government may, by notification in the official Gazette, exempt from the operation of all or any provisions of this Regulation or of all or any of the rules made under this Regulation any petroleum which has its flashing point at or above

one hundred and twenty degrees of Fahrenheit's thermometer and is imported in quantity not exceeding that specified in the notification.

Power to apply Regulation to other substances.

21. (1) The Government may, by notification in the official Gazette, apply the whole or any portion of this Regulation to any substance, other than petroleum, and may by the notification fix, in substitution for the quantities of petroleum fixed by sections 5, 6 and 10 the quantities of the substance to which those sections shall apply.

(2) When the whole or any portion of this Regulation has been applied as aforesaid to any substance other than petroleum, the provisions so applied shall be construed with all necessary modifications and shall have effect as if such other substance has been included in the definition of petroleum.

Power to limit operation of enactments relating to possession or transport of petroleum in municipalities.

22. The Government may, by notification in the official Gazette limit, in any manner it deems fit, the operation of any enactment for the time being in force relating to local authorities, in any local area or to any particular local authority and the exercise of any power conferred by any such enactment, in so for as the enactment relates to the possession or transport of petroleum.

Previous publication, etc., of rules.

23. (1) Every power to make rules conferred by this Regulation is subject to the condition of the rules being made after previous publication in such manner as the Government may, by notification in the official Gazette direct.

(2) All rules made by the Government shall be published in the official Gazette, and on such publication shall have effect as if enacted by this Regulation.

SCHEDULE.

TESTING.

(See section 3.)

I.—Nature of the Test-apparatus.

The apparatus consists of the following parts :—

(1) the oil cup ;
(2) the cover, with slide, test-lamp, and clock work arrangement for opening and closing the holes in the cover and for dipping the test flame ;
(3) the water-bath or heating vessel ;
(4) the tripod stand with jacket and spirit-lamp for heating the water-bath ;
(5) the thermometer for indicating the temperature of of the oil in the oil-cup ;
(6) the thermometer for indicating the temperature of the water in the water-bath ;
(7) the thermometer for indicating the temperature of the oil before it is poured into the oil-cup ;
(8) the dropping bottle or *pipette* for replenishing the test lamp ; and
(9) a barometer standardised at the Meteorological Office of the State or at any other place appointed by the Government.

The oil-cup is cylindrical flat-bottom vessel made of gun-metal or brass, and tinned or silvered inside. A gauge is fixed to the inside of the cup to regulate the height to which it is to be filled with the sample under examination.

The cup is provided with a close-fitting overlapping cover, which carries the thermometer, the test-lamp and the adjuncts thereto. The test lamp is suspended upon two supports by means of trunnions, which allow it to be easily inclined to a particular angle and restored to its original position. The socket in the cover, which is to hold a round bulb thermometer for indicating the temperature of the oil during the testing operation, is so adjusted that the bulb of the latter is always inserted in a definite position below the surface of the liquid.

The cover is provided with three holes, one in the centre and two smaller ones close to the sides. These are closed and opened by means of a pivoted slide. When the slide is moved so as to uncover the holes, the suspended lamp is caught by a projection fixed on the slide, and tilted in such a way as to bring the end of spout just below the surface of the lid. As the slide moves back so as to cover the holes, the lamp returns to its original position. Upon the cover, in front of and in a line with the nozzle of the lamp, is fixed a white bead, the diameter of which represents the size of the test-flame to be used.

The water-bath or heating vessel is so constructed that, when the oil-cup is placed in position in it, an air-space or air-chamber intervenes between the two: consequently, in applying the test under ordinary circumstances, the heat is transmitted gradually to the oil from the hot water through the air space. The water-bath is fitted with a socket for receiving a long bulb thermometer, to indicate the temperature of the water, It is also provided with a funnel, an overflow-pipe and two handles.

The water-bath rests upon a tripod stand, which is fitted with a copper cylinder or jacket, so that the bath is surrounded by an enclosed air-space, which retains and regulates the heat. One of the legs of the stand serves as a support for a spirit-lamp, which is attached to it by a small swing bracket.

The clock work arrangement, by which during the operation of testing the slide is withdrawn, and the test-flame dipped into the cup and raised again as the slide is replaced, is provided with a ratchet key for setting it in action for each test, and with trigger for starting it each time that the test-flame is applied.

II.—Directions for drawing the sample and preparing it for testing.

1. Drawing the sample.—In all cases the testing officer or some person duly authorized by him shall personally superintend the drawing of the sample from an original unopened tin or other vessel.

An opening sufficiently large to admit of the oil being rapidly poured or syphoned from the tin or other vessel shall be made.

Two bottles, each of the capacity of about forty fluid ounces, are to be filled with the oil. One of these, the contents of which are intended to be preserved for reference in case of need, is to be carefully corked, the cork being well driven home, cut off level with the neck, and melted sealing-wax worked into it. The other bottle may be either stoppered or corked.

2. Preparing the sample for testing.—About ten fluid ounces of the oil, sufficient for three tests, are transferred from the bottle into which the sample has been drawn to a pint-flask or bottle, which is to be immersed in water artificially cooled until a thermometer, introduced into the oil, indicates a temperature not exceeding 50° Fahrenheit.

3. Samples of certain mixtures.—Samples of liquid, and viscous and sedimentary, petroleum mixtures shall be prepared for testing in the manner prescribed by the two foregoing directions.

III.—Directions for preparing and using the Test-apparatus.

1. Preparing the water-bath.—The water-bath is filled by pouring water into the funnel until it begins to flow out at the overflow-pipe. The temperature of the water at the commencement of each test, as indicated by the long bulb thermometer, is to be 130° Fahrenheit, and this is attained in the first instance by mixing hot and cold water, either in the bath or in a vessel from which the bath is filled, until the thermometer which is provided for testing the temperature of the water gives the proper indication; or the water is heated by means of the spirit-lamp.

(which is attached to the stand of the apparatus) until the required temperature is indicated.

2. *Preparing the test lamp.*—The test-lamp is fitted with a piece of cylindrical wick of such thickness that it fills the wick-holder, but may readily be moved to and fro for the purpose of adjusting the size of the flame. In the body of the lamp, upon the wick, which is coiled within it, is placed a small tuft of cotton wool, moistened with petroleum, any oil not absorbed by the wool being removed. When the lamp has been lighted the wick is adjusted by means of a pair of forceps until the flame is of the size of the bead fixed on the cover of the oil-cup; should a particular test occupy so long a time that the flame begins to get smaller, through the supply of oil in the lamp becoming exhausted, three or four drops of petroleum are allowed to fall up on the tuft of wool in the lamp from the dropping bottle or *pipette* provided for the purpose. This can be safely done without interrupting the test.

3. *Filling the oil-cup.*—The oil-cup having been previously cooled, by placing it bottom downwards in water at a temperature not exceeding 50° Fahrenheit, is to be rapidly wiped dry, placed on a level surface in a good light, and the oil to be tested is poured in very slowly, without splashing, until its surface is level with the point of the gauge which is fixed in the cup. The round bulb thermometer is inserted into the lid of the cup, care being taken that the projecting rim of the collar touches the edge of the socket; the test-lamp, prepared as already described is placed in position, and the cover is then put on to the cup and pressed down so that its edge rests on the rim of the cup.

4. *Application of the test.*—The water-bath, with its thermometer in position, is placed in some locality where it is not exposed to currents of air, and where the light is sufficiently subdued to admit of the size of the entire test-flme being compared with that of the bead on the cover. The cup is carefully lifted without shaking it, and placed in the bath, the test-lamp is lighted, and the clock work wound up by turning the key. The thermometer in the oil-cup is now watched, and, when the temperature has reached 56° Fahrenheit, the clockwork is set in motion by pressing the tigger.

If flash takes place, the clock work is at once rewound and the tigger pressed at 57° Fahrenheit; and so on, at every degree rise of temperature, until the flash occurs, or until a temperature of 95° Fahrenheit has been reached.

If the flash takes place at any temperature below 77° Fahrenheit, the temperature at which it occurs is to be recorded. Two fresh portions of the sample are then to be successively tested in a similar manner and the results recorded. If no greater difference than 2° Fahrenheit exists between any two of the three recorded results, and if in no instance the flash has taken place within eight degrees of the temperature at which the testing is commenced, each result is to be corrected for atmospheric pressure as hereafter described, and the average of the three corrected results is the flashing point of the sample. In the event of there being a greater difference than 2° Fahrenheit between any two of the results, while in no instance has the flash taken place within eight degrees of the temperature at which the testing was commenced, the series of tests is to be rejected, and a fresh series of three similarly obtained, and so on, until a sufficiently concordant series is furnished, when the results are to be corrected and the average taken in the manner already described.

If, however a flash has occurred at or below 64° when the test is applied in the manner above described, the next testing shall be commenced ten degrees lower than the temperature at which the flash had been previously obtained (that is to say, at 54° or thereunder), and this procedure shall be continued until the results of three consecutive tests do not show a greater

difference than 2° and until a flash has not occurred in any of the three tests within eight degrees of the temperature at which the testing is commenced: Provided always that, if at the commencement of the series of tests a flash has occurred on the first application of the test flame at 56°, and if a flash has also occurred on the first application of the flame in each of three successive tests in which, thereupon, the test-flame is first applied at 46° as above directed, the testing officer shall certify that the petroleum has a flashing point below 47°, and the sample shall be reported dangerous.

If a temperature of 76° Fahrenheit has been reached without a flash occurring, the application of the test-flame is to be continued at every degree rise of temperature until a temperature of 95° Fahrenheit has been reached. If no flash has occurred up to this point, and if the petroleum is declared to be imported subject to the provisions of the Regulation, the tests shall not be continued, and the testing officer shall certify that the petroleum has a flashing point over 95° and is not dangerous. But, if the petroleum is oil ordinarily used for lubricating purposes and is declared to have its flashing point at or above 200° or is oil to which a notification of the Government exempting it from the operation of the Regulation will be applicable in the event of the flashing point being found to be at or above 120°, the test shall be continued as follows:—The oil-cup is to be removed from the water-bath, and the temperature of the water in the water-bath is to be reduced to 95° Fahrenheit by pouring cold water into the funnel (the hot water escaping by the over-flow-pipe). The air-chamber is then to be filled to a depth of 1½ inches with water at a temperature of about 95° Fahrenheit, the oil-cup is to be replaced in the water-bath and the spirit-lamp attached to the water-bath is to be lighted and placed underneath. The test flame is then to be again applied, from 96° Fahrenheit, at every degree rise of temperature as indicated by the thermometer in the oil-cup until a flash takes place or until a temperature of 200° Fahrenheit, or 120° Fahrenheit, as the case may be, has been reached. If during this operation the test flame appears to diminish in size, the lamp is to be replenished in the manner prescribed at 2 without interrupting the test.

If a flash occurs at any temperature between 76° and 200° Fahrenheit the temperature at which it occurs, subject to correction for atmospheric pressure, is the flashing point of the sample.

In repeating a test a fresh sample of oil must always be used the tested sample being thrown away, and the cup must be wiped dry from any adhering oil and cooled, as already described, before receiving the fresh sample.

5. *Correction for atmospheric pressure.*—As the flashing point of an oil is influenced by changes in atmospheric pressure to an average extent of 1·6° Fahrenheit for every inch of the barometer, a correction of the observed flashing point may become necessary. The height of the barometer must therefore be determined at the time of making the test for the flashing point. The true height of the barometer for the purpose of the test shall be considered to be the height of the column of mercury measured at 32° Fahrenheit, which is supported by the air pressure at the time of the experiment; that is the actual height of the barometer at the time of observation duly corrected for any error of the instrument and for its temperature, if necessary. For the purpose of applying the correction to the flashing point of the oil obtained by the test, a table is appended to this schedule giving the flashing points of oils ranging from 65° to 80° Fahrenheit, under pressure ranging from 27 to 31 inches of mercury.

The table is used in the following manner:—

Example.—An oil has given a flashing point of 71°, the barometer being at 28·6 inches; take the nearest number to 71° in the vertical column headed 28·6. This number is 70·8. Substitute for this the number in the same horizontal line in the column headed 30 (the normal height of the barometer). The substituted number, that is, the true flashing point of the oil, is 73°.

Directions for testing petroleum mixtures.

6. *Liquid mixtures.*—Where the petroleum mixture is wholly liquid, flows quite freely, and does not contain any sediment or thickening ingredient, such mixture is tested in the same manner as ordinary petroleum.

7. *Viscous and sedimentary mixtures.*—Where the petroleum mixture contains an undissolved sediment, as in the case of some metal polishes, which can be separated by filtration or by settlement and decantation, the sediment may be so separated and the decanted liquid may be tested in the same manner as ordinary petroleum.

In carrying out such separation, care must be taken to minimise the evaporation of the petroleum. The separation of the sediment must not be effected by distillation.

Where the petroleum mixture is such that sediment cannot be separated by the aforementioned means, or where it is of a viscous nature as in the case of India-rubber solution, quick drying paints, etc., such mixture shall be tested in a modified apparatus, which differs from that prescribed in Part I only in the addition of a stirrer to equalize the temperature throughout the sample under test.

In carrying out the test of a viscous petroleum mixture, this stirrer shall be constantly revolved at a slow speed, except when applying the test flame, with the fingers, the direction of revolution being that of the hand of a clock.

With the exception of the use of the stirrer, the manner of carrying out the test shall be the same as in the case of ordinary petroleum.

The stirrer may be removed by grasping the spindle just above the blades with the finger and thumb, and unscrewing the upper sheath. The opening in the lid, through which the stirrer passes, may then be closed by a plug provided for the purpose.

When this has been done, the apparatus shall be deemed to comply with the specification set forth in this schedule and may be used for testing ordinary petroleum.

A model of the aforementioned apparatus will be deposited in the office of the Chemical Examiner to Government, Bangalore, and the provisions of section 19 of the Petroleum Regulation, in regard to verification and stamping shall apply also to such apparatus as thought it were the apparatus prescribed by the said Regulation.

For the purpose of carrying out such verification the stirrer shall be removed and the opening plugged as hereinbefore directed. The apparatus shall then be tested with ordinary petroleum. The stirrer shall be verified by comparison of measurements.

IV.—Directions for determining the flashing point of petroleum and petroleum mixtures which are not fluid at ordinary temperatures but liquefy when heated in a water-bath, or which are liquid at ordinary temperatures but solidify on being cooled to 50°F.

1. *Nature of the test-apparatus.*—The instrument employed is the Abel-Pensky petroleum testing apparatus, fitted with an additional thermometer to indicate the temperature of the oil in close proximity to the walls of the cup. This thermometer has a cylindrical bulb, $\frac{7}{8}$ inch in length and $\frac{3}{16}$ inch in diameter. It is scaled from 45° to 165° Fahrenheit, ten degrees on the scale occupying $\frac{3}{8}$ inch. The thermometer is held vertically in a socket attached to the cover of the oil-cup in such a position that the bulb is $\frac{1}{10}$ inch from the side of the cup.

(The thermometer can be removed and the orifice which is provided for it closed by means of an india-rubber plug, if the apparatus is required for testing petroleum in the ordinary way.)

2. *Directions for preparing the sample for testing.*—About ten fluid ounces of the oil are placed in a pint-flask, the mouth of which is then closed with an india-rubber stopper and the sample is liquefied by placing the flask in a water-bath, the temperature of which is only raised sufficiently high to liquefy the oil.

3. *Directions for preparing and using the test-apparatus.*— The water-bath and test-lamp are to be prepared in the manner prescribed in Part III of this Schedule. The oil-cup is to be filled with the liquefied oil, and the cover (into which both thermometers are to be previously inserted) placed on it, care being taken that the bulb of the additional thermometer is not brought into contact with the bracket-gauge fixed inside the cup. The oil-cup is then to be placed in a refrigerator, or plunged up to the projecting collar in water maintained at sufficiently low temperature, until both thermometers indicate the temperature at which the testing of petroleum is directed in Part III of this Schedule to be commenced. The oil-cup is then to be removed, wiped dry and placed in the water-bath, and the testing effected in the manner prescribed in Part III of this Schedule, the temperature indicated by the additional (vertical) thermometer alone being noted, and the average of three determinations, duly corrected for atmospheric pressure, being recorded as the flashing point of the sample, provided that no greater difference than 4° Fahrenheit exists between any two of such results.

Table for correction of Flashing Points indicated by the test for Variations in Barometric Pressure on either side of Thirty Inches.

Barometer in Inches.	Flashing Point in Degrees Fahrenheit																															
27	60·2	60·5	60·8	61·2	61·5	61·8	62·1	62·4	62·8	63·1	63·4	63·7	64	64·4	64·7	65	65·3	65·6	66	66·3	66·6											
27·2	61·2	61·5	61·8	62·2	62·5	62·8	63·1	63·4	63·8	64·1	64·4	64·7	65	65·4	65·7	66	66·3	66·6	67	67·3	67·6											
27·4	62·2	62·5	62·8	63·2	63·5	63·8	64·1	64·4	64·8	65·1	65·4	65·7	66	66·4	66·7	67	67·3	67·6	68	68·3	68·6											
27·6	63·2	63·5	63·8	64·2	64·5	64·8	65·1	65·4	65·8	66·1	66·4	66·7	67	67·4	67·7	68	68·3	68·6	69	69·3	69·6											
27·8	64·2	64·5	64·8	65·2	65·5	65·8	66·1	66·4	66·8	67·1	67·4	67·7	68	68·4	68·7	69	69·3	69·6	70	70·3	70·6											
28	65·2	65·5	65·8	66·2	66·5	66·8	67·1	67·4	67·8	68·1	68·4	68·7	69	69·4	69·7	70	70·3	70·6	71	71·3	71·6											
28·2	66·2	66·5	66·8	67·2	67·5	67·8	68·1	68·4	68·8	69·1	69·4	69·7	70	70·4	70·7	71	71·3	71·6	72	72·3	72·6											
28·4	67·2	67·5	67·8	68·2	68·5	68·8	69·1	69·4	69·8	70·1	70·4	70·7	71	71·4	71·7	72	72·3	72·6	73	73·3	73·6											
28·6	68·2	68·5	68·8	69·2	69·5	69·8	70·1	70·4	70·8	71·1	71·4	71·7	72	72·4	72·7	73	73·3	73·6	74	74·3	74·6											
28·8	69·2	69·5	69·8	70·2	70·5	70·8	71·1	71·4	71·8	72·1	72·4	72·7	73	73·4	73·7	74	74·3	74·6	75	75·3	75·6											
29	70·2	70·5	70·8	71·2	71·5	71·8	72·1	72·4	72·8	73·1	73·4	73·7	74	74·4	74·7	75	75·3	75·6	76	76·3	76·6											
29·2	71·2	71·5	71·8	72·2	72·5	72·8	73·1	73·4	73·8	74·1	74·4	74·7	75	75·4	75·7	76	76·3	76·6	77	77·3	77·6											
29·4	72·2	72·5	72·8	73·2	73·5	73·8	74·1	74·4	74·8	75·1	75·4	75·7	76	76·4	76·7	77	77·3	77·6	78	78·3	78·6											
29·6	73·2	73·5	73·8	74·2	74·5	74·8	75·1	75·4	75·8	76·1	76·4	76·7	77	77·4	77·7	78	78·3	78·6	79	79·3	79·6											
29·8	74·2	74·5	74·8	75·2	75·5	75·8	76·1	76·4	76·8	77·1	77·4	77·7	78	78·4	78·7	79	79·3	79·6	80	80·3	80·6											
30	75·2	75·5	75·8	76·2	76·5	76·8	77·1	77·4	77·8	78·1	78·4	78·7	79	79·4	79·7	80	80·3	80·6	81	81·3	81·6											
30·2																																
30·4																																
30·6																																
30·8																																
31																																

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Dewan.